

AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph beginning on page 1, line 19, with the following amended paragraph:

Furthermore, in the pump laser module 110 of Fig. 11, reference numeral 111 denotes a 980-nm band semiconductor laser (i.e. laser diode), reference numeral 112 denotes a temperature monitor for monitoring the temperature of the pump laser module 110, reference numeral 113 denotes a cooler for keeping the temperature of the pump laser module 110 constant according to the monitoring result of the temperature monitor 112, and reference numeral 115 denotes a coupling optical system for coupling light emitted out of the semiconductor laser 111 into an optical fiber 120.

Please replace the paragraph beginning on page 3, line 8, with the following amended paragraph:

Population inversion is formed by an electric current's flowing in a forward direction between the p-type electrode 111f and the n-type electrode 111a, and hence injecting electrons and ~~halls~~ holes into the MQW active layer 111d. As a result, the semiconductor laser 111 oscillates at a 980-nm band of emission wavelengths determined by the bandgap of the MQW active layer 111d, and emits laser light to the optical fiber 120 by way of the coupling optical system 115.

Please replace the paragraph beginning on page 4, line 1, with the following amended paragraph:

When the temperature of the pump laser module 110 changes greatly because of a self heating of the semiconductor laser 111 and change in ambient temperature, the wavelength characteristic of the threshold gain distribution also changes. On the other hand, since the wavelength characteristic of the optical fiber grating 130 remains being fixed, the semiconductor laser 111 does not oscillate in external resonance mode and therefore the emission wavelength cannot be kept constant.

Please replace the paragraph beginning on page 4, line 10, with the following amended paragraph:

To avoid this trouble problem, a temperature control mechanism is disposed in the semiconductor laser device of Fig. 11. In other words, the prior art semiconductor laser device is so constructed as to monitor the temperature of the pump laser module 110 by means of the temperature monitor 112, to control an electric current flowing through the cooler 113 by means of a temperature controller not shown in the figure, and to keep the temperature of the pump laser module 110 constant. Thus, the semiconductor laser device can stabilize the emission wavelength, and can control the change in the gain-wavelength characteristic when applied to EDFA. Japanese patent application publication No. 2000-353856 discloses a prior art technology associated with the semiconductor laser device mentioned above, for example.

Please replace the paragraph beginning on page 12, line 4, with the following amended paragraph:

Fig. 12 is a diagram showing an example of the structure of a semiconductor laser of the prior art semiconductor laser device; ~~[[and]]~~

Please replace the paragraph beginning on page 12, line 7, with the following amended paragraph:

Fig. 13 is a diagram showing an energy band structure in the vicinity of an MQW active layer of the semiconductor laser; and

Fig. 14 is a diagram showing the structure of a semiconductor laser device according to another embodiment of the present invention.

Please replace the paragraph beginning on page 12, line 22, with the following amended paragraph:

Furthermore, in the pump laser module 10 of Fig. 1, reference numeral 11 denotes a semiconductor laser (i.e. laser diode) having a single quantum well (SQW) active layer, reference numeral 14 denote an anti-reflection coating formed on a laser light emitting exit face of the semiconductor laser 11, and reference numeral 15 denote a coupling optical system for coupling the laser light emitted out of the laser light emitting exit face of the semiconductor laser 11 into the optical fiber 20.

Please replace the paragraph beginning on page 24, line 3, with the following amended paragraph:

In Figs. 7 (a) and 7 (b), reference numeral 51 denotes a band for electron, reference numeral 52H denotes a band for heavy ~~hall~~ hole, reference numeral 52L denotes a band for light ~~hall~~ hole, reference numerals 53 and 54 denote a first ~~subband~~ sub-band and a second ~~subband~~ sub-band for electron, respectively, reference numerals 55 and 56 denote a first ~~subband~~ sub-band and a second ~~subband~~ sub-band for heavy ~~hall~~ hole, respectively, reference numerals 57 and 58 denote a first ~~subband~~ sub-band and a second ~~subband~~ sub-band for light ~~hall~~ hole, respectively, and reference numeral 59 denotes a barrier layer.

Please replace the paragraph beginning on page 24, line 12, with the following amended paragraph:

As explained in <Reference 2> mentioned below, in Fig. 7 (a), a transition (e1-hh1) from the first ~~subband~~ sub-band 55 for heavy ~~hall~~ hole to the first ~~subband~~ sub-band 53 for electron and a transition (e1-lh1) from the first ~~subband~~ sub-band 57 for light ~~hall~~ hole to the first ~~subband~~ sub-band 53 for electron are acceptable. On the other hand, in Fig. 7 (b), since the width of the barrier layer is narrowed to 3 nm, the levels are divided by the interaction among the levels due to the tunnel effect and a transition (e2-hh2) from the second ~~subband~~ sub-band 56 for heavy ~~hall~~ hole to the second ~~subband~~ sub-band 54 for electron and a transition (e2-lh2) from the second ~~subband~~ sub-band 58 for light ~~hall~~ hole to the second ~~subband~~ sub-band 54 for electron are acceptable in addition to the transition (e1-hh1) and the transition (e1-lh1).

Please replace the paragraph beginning on page 36, line 10, with the following amended paragraph:

Embodiment 9.

There can be provided an incident angle adjustment mechanism for adjusting the incident angle of laser light incident upon a narrow-band filter 17 so that it approaches 90° at high ambient temperature. For example, as shown in Fig. 9, this incident angle adjustment mechanism 40 includes a temperature monitor 41 for monitoring the temperature of the semiconductor laser device, and a control unit 42 for storing a relationship between the incident angle of the laser light with the narrow—band filter 17 and the transmission property of the narrow-band filter 17 while making a function and table associated with the relationship, and adjusting the incident angle of the laser light with the narrow-band filter 17 by referring to the temperature (i.e. thermistor 43) monitored by the temperature monitor and the function and table associated with the relationship. The incident angle of the laser light with the narrow-band filter 17 can be varied according to the temperature of the semiconductor laser device so that light having a certain wavelength always passes through the narrow-band filter 17.

Please replace the paragraph beginning on page 37, line 10, with the following amended paragraph:

There can be provided an optical fiber amplifier that includes the semiconductor laser device according to any one of the above-mentioned first through ninth embodiments as an excitation light source. The optical fiber amplifier

can comprise a pumping light-signal light coupling unit 50 for coupling laser light emitted, as pumping light, by the semiconductor laser device and another laser light provided as signal light 51, and a rare-earth-doped optical fiber 52 which is pumped by the pumping light from the pumping light-signal light coupling unit so as to amplify the signal light from the pumping light-signal light coupling unit. The optical fiber amplifier can thus control the change in the gain-wavelength characteristic of the semiconductor laser device.